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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,137	04/07/2006	Kevin Blann	02814.0081-0000	2745
22852 7590 07/09/2008 FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413				
EXAMINER LU, C CAIXIA				
ART UNIT		PAPER NUMBER		
1796				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/539,137

## Applicant(s)

BLANN ET AL.

## Examiner

Caixia Lu

## Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1, 6-9, 13-17 and 20-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 13, 15-17 and 20-37 is/are rejected.
- 7) ☒ Claim(s) 8, 9 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/808)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. Claims 1, 6, 13, 15-17, 20-35, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon et al. (WO 03/053891 A1, its family, US 2005/0119516, is referred hereinafter for convenience).

Dixon teaches the trimerization of ethylene in the presence of a catalyst composition comprising a chromium complex, a mixed heteroatomic ligand, and an organoaluminum cocatalyst ([0015], [0016], [00214], [0027], [0039], and [0040]). When the linking group, B-(R<sup>2</sup>)-A(R<sup>1</sup>)-(R<sup>5</sup>)-C, of Dixon ligand compound, R<sup>1</sup>A(R<sup>2</sup>BR<sup>3</sup>R<sup>4</sup>)(R<sup>5</sup>CR<sup>6</sup>R<sup>7</sup>), is bis(phosphinophenyl)amine as shown in the ligand compound disclosed in line 3-4 of [0027], and R<sup>3</sup>, R<sup>4</sup>, R<sup>6</sup>, and R<sup>7</sup> are non-electron donating substituent such as alkyl, aryl, substituted aryl such as o-methylphenyl, halogen, nitro, etc. as listed in [0025], Dixon's ligand compound meet the ligand compound limitation of the instant claims.

Therefore, it would have been obvious to a skilled artisan at the time the invention was made to employ Dixon's teaching to conducted trimerization in the presence of the catalyst wherein the ligand compound is defined as shown above because such is within the generic disclosure of the reference and all of the embodiments of the reference are expected to work and in the absence of any showing of criticality and unexpected results.

2. Claims 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dixon et al. (WO 03/053891 A1, its family, US 2005/0119516, is referred hereinafter for convenience) and Briggs (US 4,668,838) independently in view of Wass (US 6,800,702).

Dixon's teaching of trimerization process is relied upon as shown above. It is noted that Dixon does not expressly disclose conducting an in situ trimerization and copolymerize the trimer with ethylene in the presence of a polymerization catalyst to provide an olefin copolymer. However, Wass teaches a process for preparation of a branched ethylene polymer by in situ preparation of an ethylene trimer in the presence of phosphorous bidentate ligand containing catalyst and copolymerization of the trimer with ethylene in the presence of a polymerization catalyst to provide the branched ethylene polymer (col. 2, lines 32-38).

Since Dixon's trimerization process is functional equivalent to that of Wass, it would have been obvious to a skilled artisan at the time the invention was made to employ Dixon's trimerization process to Wass' copolymerization process since it is conventional to replace functionally equivalent process and in the absence of any showing criticality and unexpected results.

With the similar rationale, claim 36 is rejected over Briggs in view of Wass.

***Allowable Subject Matter***

3. Claims 8, 9 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The catalyst of instant claims is taught in Wass (US 7,022,788). However, Wass (US 7,022,788) discloses the catalyst to be used for olefin polymerization and does not teach or suggest use the catalyst for oligomerization.

***Response to Arguments***

4. Applicant's arguments filed April 21, 2008 have been fully considered. The rejections under 35 USC 112 and 35 USC 102&103 over Briggs are withdrawn in view of applicants' amendment, however, the rejection under 35 USC 103 over Dixon as shown above are maintained.

Applicants argue that Dixon does not teach or even remotely suggest the presence of at least two or more aromatic or hetero-aromatic groups bonded to the P atoms which contain non-polar substituents in the ortho position as set forth in amended claim 1. This is incorrect. As shown in the rejections in the previous Office Action which are also recited above, Dixon expressly discloses in [0025] that the substituents on the P atoms are selected from substituted aryl. One can immediately envision the simplest substituted aryl to be methylphenyl, and the methyl can be on ortho, meta or para position. Therefore, it would have been obvious to select those substituents from substituted aryl such as o-methylphenyl unless there is showing of criticality and unexpected results.

***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached on 9:00 a.m. to 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Caixia Lu/  
Caixia Lu, Ph. D.  
Primary Examiner  
Art Unit 1796